

We claim:

1. A process for the preparation of nucleated polyolefins, which process comprises forming a gel of one or more nucleating agents by dissolving the nucleating agent in a solvent, mixing the gel with a polyolefin powder, removing the solvent and extruding the mixture at the minimum temperature of the melting point of the polyolefin to obtain the nucleated polyolefin.
2. A process as claimed in claim 1 wherein one or more additives selected from the group consisting of antioxidants, antislip agents, acid scavengers, lubricants and UV absorbers is added to the gel of one or more nucleating agent before mixing with the polyolefin.
3. A process as claimed in claim 1 wherein the gel of the one or more nucleating agent is prepared by dissolving the one or more nucleating agent in a solvent and heating the solution to the boiling point of the solvent and cooling the solution.
4. A process as claimed in claim 1 wherein a second solvent is added to the solution of the one or more nucleating agent to gel the nucleating agent.
5. A process as claimed in claim 1 wherein the polyolefin is polypropylene.
6. A process as claimed in claim 1 wherein the nucleating agent comprises a metallic salt selected from the group consisting of salts of sodium, potassium, lithium, calcium, magnesium, aluminum with organic carboxylic acids.
7. A process as claimed in claim 6 wherein the organic carboxylic acid is selected from the group consisting of aliphatic mono and dicarboxylic acids of 2-16 carbon atoms, aromatic mono and poly carboxylic acids, substituted aromatic carboxylic acids and aliphatic and aromatic sulfonic acids.
8. A process as claimed in claim 6 wherein the organic carboxylic acid is selected from the group consisting of aliphatic mono and dicarboxylic acids of 2-8 carbon atoms.
9. A process as claimed in claim 1, wherein the solvent used for dissolving the nucleating agent is selected from the group consisting of water, ketones containing 3-10 carbon atoms, aliphatic alcohols containing 1-12 carbon atoms, aliphatic esters, ethers, cyclic ethers, hydrocarbons of 5-15 carbon atoms, mixture of hydrocarbons, aromatic hydrocarbons, petrol, kerosene, chlorinated hydrocarbons, dimethylformamide, dimethyl acetamide and dimethyl sulfoxide.
10. A process as claimed in claim 1, wherein the solvent used for dissolving the nucleating agent comprises ketones preferably 3-7 carbon atoms.
11. A process as claimed in claim 1, wherein the solvent used for dissolving the nucleating agent comprises aliphatic alcohols having 1-6 carbon atoms.

12. A process as claimed in claim 9, wherein the aromatic hydrocarbon solvent is selected from toluene and xylene.
13. A process as claimed in claim 4, wherein the second solvent used for gelling the nucleating agent may be a solvent or a nonsolvent to the solvent used for preparing solution of the nucleating agent.
14. A process as claimed in claim 4, wherein the second solvent used for gelling the nucleating agent is selected from the group consisting of alcohols, ketones, aliphatic hydrocarbons, aromatic hydrocarbons and esters.
15. A process as claimed in claim 4, wherein the second solvent used for gelling the nucleating agent is selected from the group consisting of methanol, ethanol, toluene, xylene, n-hexane, cyclohexane, acetone, MIBK and ethylacetate.
16. A process as claimed in claim 1, wherein the quantity of nucleating agent gel to polyolefin is in the range of 0.01 to 10 wt % based on polyolefins.
17. A process as claimed in claim 16, wherein the quantity of nucleating agent gel to polyolefin is in the range of 0.01 to 2 wt % based on polyolefins.
18. A process as claimed in claim 16, wherein the quantity of nucleating agent gel to polyolefin is in the range of 0.1 to 0.5 wt % based on polyolefins.
19. A process as claimed in claim 1, wherein the polyolefin is selected from the group consisting of homopolymers or copolymers of olefin with one or more ethylenically unsaturated comonomers.
20. A process as claimed in claim 19, wherein the comonomer is provided in an amount of 10% or less based on the weight of olefin.
21. A process as claimed in claim 1, wherein the polyolefin comprises polymers and copolymers of aliphatic mono olefins containing two to six carbon atoms and having molecular weight of about 30,000 to about 5,00,000.
22. A process as claimed in claim 1, wherein the polyolefin comprises a polymer or copolymer having a molecular weight in the range of 30,000 to 3,00,000.
23. A process as claimed in claim 1, wherein the polyolefin is selected from the group consisting of polyethylene, polypropylene and ethylene-propylene copolymers.
24. A process as claimed in claim 1, wherein the gel of nucleating agent is mixed with the polyolefin gradually by mechanical blending mechanically followed by removal of solvent by exposing to air or heating in an oven or an air circulated oven at a temperature of about 50°C.
25. Process as claimed in claim 1 wherein the nucleating agent gel is sodium benzoate gel.